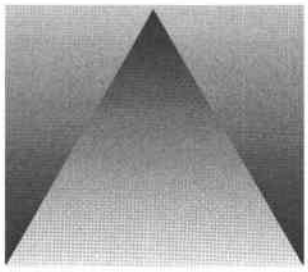

ENVIROMETRIX

Environmental Consultants

Department of the Navy
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, California 92132-5190

April 20, 2000

Attention: Mr. Richard Mach

QUALITATIVE REVIEW AND RESPONSE TO
EXPLANATION OF SIGNIFICANT DIFFERENCES (ESD)
TO THE RECORD OF DECISION (ROD) FOR PARCEL B
DOCUMENT NUMBER 5090, SER 06CH.RM/0272, DATED APRIL 10, 2000.
HUNTERS POINT SHIPYARD
SAN FRANCISCO, CALIFORNIA
EMC JOB NUMBER 199624

Dear Mr. Mach;

Envirometrix Corporation (EMC) on behalf of Southeast Alliance for Environmental Justice (SAEJ) has prepared the following qualitative review and comments related to the above-referenced document.

EMC Key Findings and Concerns

- The soil cleanup goals proposed in the document have not been shown to "remain protective of human health *and the environment*" according to CERCLA. Only human health exposures were considered in developing proposed cleanup goals for the ESD. Leaching to groundwater and possible groundwater-to-surface water interactions should be considered, as well as potential exposures to aquatic species and other biota in the bay (e.g., migratory birds). The shallow depth to groundwater, coupled with the proximity of Parcel B to the San Francisco Bay, indicates that these pathways should be considered in all calculations. In some cases (especially for those chemicals that leach to groundwater over time), soil cleanup goals necessary to protect groundwater resources and the San Francisco Bay may be much lower than those calculated on the basis of human health exposure alone.

- Use of a single chemical, PRG-driven approach is inadequate for protection of human health at the Site. There are numerous chemicals at the Site, and residents and construction workers will be exposed to a range of chemicals simultaneously, not just a single chemical. Using the proposed cleanup goals and the single-chemical approach proposed in the ESD, the residual concentrations at the Site may very well exceed 1×10^{-3} risk to future residents. Not only is this unacceptable, it is outside of the accepted EPA risk range of 1×10^{-4} to 1×10^{-6} risk, and thus not in compliance with CERCLA. The Navy should

provide risk evaluations that demonstrate that the *total residual risk* at the Site will not exceed 1 x 10^{-6}. Cleanup goals should be calculated assuming *cumulative* exposure to *all* chemicals within an exposure grid, and PRGs should be adjusted accordingly.

- Although Attachment A includes proposed PRGs for VOCs, the text (Attachment B) indicates that VOCs would not be considered in goal development, since the concentration of chemicals would not likely remain constant over a 30-year duration. It is not only completely inappropriate to exclude VOCs from risk considerations and remediation at the Site, it is also a clear violation of the CERCLA mandate. It is standard risk assessment protocol to assume that the concentration of *all* chemicals, including VOCs, will be constant over a 30-year exposure period. By not following this standard approach, the Navy is essentially proposing to expose future residents to significantly higher health risk potential over time. Humans can be exposed to VOCs in soil via direct contact (dermal, ingestion), as well as via inhalation exposures (e.g., volatilization from soils to outdoor air; volatilization into future homes, and subsequent indoor air exposure). In addition, as clearly demonstrated on Table B-2 of the ESD, many VOCs at the Site are carcinogenic, and others are highly toxic via various routes of exposure. VOCs in soil can also readily leach to groundwater, and may possibly affect Bay species over time. *All pertinent exposures* should be considered *for all chemicals* when developing the proposed remedial goals.

- In addition to long-term residential exposure, PRGs should be established for shorter-term construction worker exposures. In some cases, PRGs may be lower for direct worker exposures during housing construction than for long-term residential exposure. The lower of the two values (residential or worker PRGs) should be used as the cleanup goal, to ensure the safety of the workers *and* the residents at the Site.

- PRG development for VOCs should include long-term indoor air exposures for future homes built on the property.

- It is inappropriate to remediate Benzo (A) Pyrene (BaP) and other chemicals to their detection limit rather than to their lower, more health-protective PRGs. By doing so, the Navy is essentially proposing to leave the carcinogens BaP at 1 x 10^{-4} levels, heptachlor epoxide and anthracene at 1 x 10^{-5} levels, and n-nitroso-di-n-propylamine at1 x 10^{-3} levels (*10 to 100 times the targeted PRGs*); and to leave cyanide at an Hazard Index (HI) of 10 (*10 times the targeted PRG, and the agency-mandated HI of 1.0*). Special analytic services are available from laboratories, and enable attainment of lowered detection limits for a number of chemicals. The Navy should utilize these services so that PRG cleanup levels can be achieved at the Site.

- In a residential setting such as that proposed for Parcel B, it is inappropriate and unrealistic to assume that the Navy will be able to "[govern] handling of the residual contaminated soils," as proposed in the Introduction to the ESD.

- Groundwater usage should be unlimited for this Site, especially since it will be a residential parcel. It is extremely unlikely that the Navy will be able to fully restrict future residents from using and/or contacting shallow groundwater in the future.

- In future sampling, *all COPCs* should be included in the analyses, to ensure that ***no*** contamination above a cumulative risk of 1×10^{-6} will be left in place.

- In all areas, samples should be collected to 10 feet below ground surface. This is standard protocol, and is necessary to verify the residual long-term risk to future residents.

- Samples should be collected in a ***biased*** rather than random manner. The fate and transport mechanisms of each chemical, soil type, rainfall, and other data should be used to justify the sampling approach, and samples should be collected in areas of highest expected concentrations. This is necessary to ensure that all likely areas of contamination are considered in remediation, and in the evaluation of residual risk.

- The use of composite samples can artificially "dilute" the overall detected concentration, and sometimes provide false results. For example, perhaps four samples are N.D. (or at very low concentrations) for a specific chemical, and one sample is elevated significantly above the remedial goal and/or screening level. Mixing these samples can suggest that all areas are below the remedial goal, and that no action is necessary, thus leaving excessive contamination in place. In addition, there are concerns over the total proposed sample population. Sample populations less than approximately 12-14 samples are inadequate to establish a UCL. On the basis of these concerns, it is requested that the Navy conduct discrete sampling at the Site.

- The DTSC slope factor (SF) for PCBs should be used to develop the proposed goals if it is more health-protective than the EPA SF.

- It is recognized that the Navy rounded PRGs to two significant figures. However, if there are any cases in which the PRG on the EPA's website is lower than the calculated value proposed by the Navy, the lower of the two values should always be used.

- A number of errors occur on Attachment A, making it difficult for the public to understand the final proposed values for each chemical. For example, it is not explained on the table that the shaded areas represent the proposed final cleanup goal. In addition, the HPAL for Ni, CrIII, and Co are not provided (footnote h), and it does not appear that footnotes "A" and "C" correspond to anything listed on the table. Further, it is unclear why there is no proposed "99 PRG with produce" for lead, implying that the proposed cleanup value is 1,400 mg/kg, rather than (no greater than) 221 mg/kg specified in Section I. Also, what are the proposed remedial goals for 1,2-DCB and 1,4-DCB, and what are the concentration units for the proposed values? This table should be revised to include all values, presented in a manner that allow the public to clearly understand the changes made between 1995 and 1999, and the values being proposed as cleanup goals. Also, please provide justification for the surrogate chemicals used when a chemical did not have a toxicity value. In addition, what are the units for the values in the table (PPM? PPB?)

- Please define the terms used in Table B-2 in a footnote, for the benefit of the public.
- The regulatory agencies or other third party should independently verify Navy PRG calculations, to ensure that intake assumptions, toxicity values, equations, and proposed PRGs are correct.

Yours very truly,

Norman T. Shopay

Norman T. Shopay R.G.
Principal

Gayle Edmisten Watkin

Gayle Edmisten Watkin
Principal Toxicologist

CC: Mr. Alex Lantsberg
Southeast Alliance for Environmental Justice (SAEJ)
744 Innes Avenue, San Francisco, CA 94124

Mr. Chein Kao
DTSC
700 Heinz Avenue
Suite 200
Berkeley, CA 94710

Ms. Claire Trombador
EPA Region IX
75 Hawthorne Street (SFD82)
San Francisco, CA 94195-3901

Ms. Amy Brownell,
San Francisco Dept. of Public Health
1390 Market Street, Suite 910
San Francisco, CA 94102

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